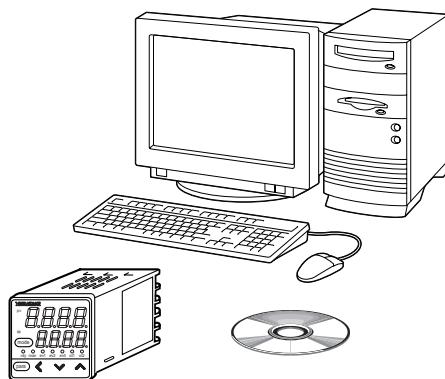# SLP-C35
Smart Loader Package
for
SDC15/25/26/35/36
Single Loop Controller

User's Manual

Thank you for purchasing the SLP-C35 for Single Loop Controller SDC 15/25/26/35/36.
This manual contains information for ensuring correct use of the SLP-C35. It also provides necessary information for installation, maintenance, and trou-bleshooting.
This manual should be read by those who design and maintain devices that use the SDC15/25/26/35/36.
Be sure to keep this manual nearby for handy reference.

Yamatake Corporation

RESTRICTIONS ON USE

This product has been designed, developed and manufactured for general-purpose application in machinery and equipment.
Accordingly, when used in applications outlined below, special care should be taken to implement a fail-safe and/or redundant design concept as well as a periodic maintenance program.
- Safety devices for plant worker protection
- Start/stop control devices for transportation and material handling machines
- Aeronautical/aerospace machines
- Control devices for nuclear reactors

Never use this product in applications where human safety may be put at risk.

IMPORTANT

Do not apply a strong force while connecting a loader plug. Failure to do so might damage the instrument.

⚠ Handling Precautions
Application of excessive force to the loader plug might cause communication failure. If such failure happens, reconnect the loader plug correctly.

REQUEST

Ensure that this User's Manual is handed over to the user before the product is used.

Copying or duplicating this User's Manual in part or in whole is forbidden. The information and specifications in this User's Manual are subject to change without notice.

Considerable effort has been made to ensure that this User's Manual is free from inaccuracies and omissions.
If you should find any inaccuracies or omissions, please contact Yamatake Corporation.

In no event is Yamatake Corporation liable to anyone for any indirect, special or consequential damages as a result of using this product.

Unpacking

Check the following items when removing the SLP-C35 from its package:

1. Check the model No. to make sure that you have received the product that you ordered.
2. Check the SLP-C35 for any apparent physical damage.
3. Check the contents of the package against the Package List to make sure that all accessories are included in the package.

After unpacking, handle the SLP-C35 and its accessories taking care to prevent damage or loss of parts.

If an inconsistency is found or the package contents are not in order, immediately contact your dealer.

| Name	Model No.	Q'ty	Remarks
SLP-C35 System disk	SLP-C35J50	1	CD-ROM
Special cable	-	1	(1 set)
User's Manual	CP-UM-5290E	1	This manual.

The Role of This Manual

A total of eight different manuals are available for the SDC15/25/26/35/36. Read them as necessary for your specific requirements. If a manual you require is not available, contact Yamatake Corporation or its dealer.
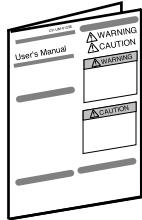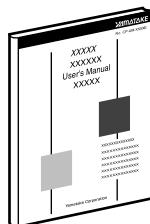
SDC15 Single Loop Controller User's Manual "Installation"
                                                              Manual No. CP-UM-5287E

This manual is supplied with the product. Personnel in charge of design and/or manufacture of a system using this unit must thoroughly read this manual. This manual describes the safety precautions, installation, wiring, list of parameters, and primary specifications. For further information about operation, refer to other manuals, "Basic Operation" and/or "Installation & Configurations".
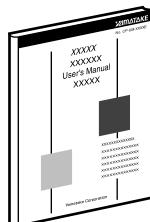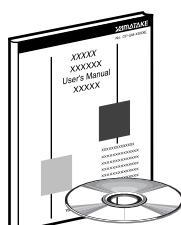
SDC15 Single Loop Controller User's Manual "Basic Operation"
                                                              Manual No. CP-SP-1147E

This manual is optional (sold separately). The manual describes the functions you can set up only with "Simple configuration". Personnel in charge of design, manufacture, operation, and/or maintenance of a system using this unit must thoroughly read this manual. This manual describes the installation, wiring, major functions and settings, operating procedures, troubleshooting, and detailed specifications.

SDC15 Single Loop Controller User's Manual "Installation & Configurations"   **Manual No. CP-SP-1148E**

This manual is optional (sold separately). The manual describes the hardware and all functions of this unit. Personnel in charge of design, manufacture, operation, and/or maintenance of a system using this unit and those in charge of communication software of a system using the communication functions of this unit must thoroughly read this manual. This manual also describes the installation, wiring, connections for communication, all functions and settings of this unit, operating procedures, communication with host station, such as personal computer, communication addresses, troubleshooting, and detailed specifications.

SLP-C35 Smart Loader Package for SDC15/25/26/35/36
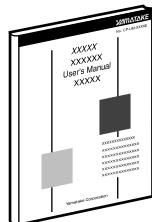**Single Loop Controller User's Manual   Manual No. CP-UM-5290E**

This manual.
This manual is supplied with the SLP-C35 Smart Loader Package. The manual describes the software used to make various settings for SDC15/25/26/35/36 using a personal computer. Personnel in charge of design or setting of a system using SDC15/25/26/35/36 must thoroughly read this manual. The manual describes installation of the software into a personal computer, operation of the personal computer, various functions, and setup procedures.
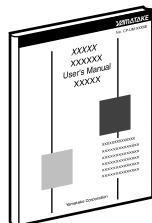
SDC25/26 Single Loop Controller User's Manual "Installation"
                                        Manual No. CP-UM-5288E

This manual is supplied with the product. Personnel in charge of design and/or manufacture of a system using this unit must thoroughly read this manual. This manual describes the safety precautions, installation, wiring, list of parameters, and primary specifications. For further information about operation, refer to another manual, "Installation & Configurations".
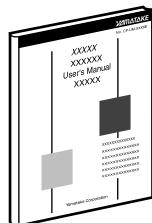
SDC25/26 Single Loop Controller User's Manual "Installation & Configurations"   **Manual No. CP-SP-1149E**

This manual is optional (sold separately). The manual describes the hardware and all functions of this unit. Personnel in charge of design, manufacture, operation, and/or maintenance of a system using this unit and those in charge of communication software of a system using the communication functions of this unit must thoroughly read this manual. This manual also describes the installation, wiring, connections for communication, all functions and settings of this unit, operating procedures, communication with host station, such as personal computer, communication addresses, troubleshooting, and detailed specifications.

SDC35/36 Single Loop Controller User's Manual "Installation"
                                        Manual No.CP-UM-5289E

This manual is supplied with the product. Personnel in charge of design and/or manufacture of a system using this unit must thoroughly read this manual. This manual describes the safety precautions, installation, wiring, list of parameters, and primary specifications. For further information about operation, refer to another manual, "Installation & Configurations".

SDC35/36 Single Loop Controller User's Manual "Installation & Configurations"   **Manual No.CP-SP-1150E**

This manual is optional (sold separately). The manual describes the hardware and all functions of this unit. Personnel in charge of design, manufacture, operation, and/or maintenance of a system using this unit and those in charge of communication software of a system using the communication functions of this unit must thoroughly read this manual. This manual also describes the installation, wiring, connections for communication, all functions and settings of this unit, operating procedures, communication with host station, such as personal computer, communication addresses, troubleshooting, and detailed specifications.

Organization of This User's Manual

This manual is organized as follows:

Chapter 1. INTRODUCTION

Be sure to read this chapter before you start using the Smart Loader Package. This chapter describes the required operating environment for the personal computer, how to install the package, and briefly introduces its features.

Chapter 2. INSTALLATION, STARTINGUP AND QUITTING THE LOADER

This chapter describes how to install, start up and quit.

Chapter 3. SETTING UP

This chapter describes how to set up the data.

Chapter 4. MONITORING

This chapter describes how to change the settings, as well as the screens monitoring the operation status.

Chapter 5. TROUBLESHOOTING

This chapter describes error messages that are displayed when trouble occurs, and how to remedy trouble.

Contents

Conventions Used in This Manual

The following conventions are used in this manual:

⚠ Handling Precautions :
Handling Precautions indicate items that the user should pay attention to when handling the SLP-C35PRO.

📖 Note : Notes indicate useful information that the user might benefit by knowing.

☞ : This indicates the item or page that the user is requested to refer to.

(1), (2), (3) : The numbers with the parenthesis indicate steps in a sequence or indicate corresponding parts in an explanation.

[OK] button : Indicates a selection button in screens displayed on the personal computer.

[Option] : Indicates messages and menus displayed on the personal computer.

\>> : Indicates the result of an operation, details displayed on the personal computer or devices, or the state of a device after an operation.

[Ctrl] key, [A] key : Indicates keys on the keyboard.

[Ctrl]+[A] key : Indicates the operation of pressing the [A] key with the [Ctrl] key on the keyboard held down.

Chapter 1.   INTRODUCTION

1 - 1   Overview

This software SLP-C35 is an engineering tool for the SDC15/25/26/35/36.

📖 Note

- Install SLP-C35 on the hard disk following the procedure in
  ☞■ Installing the loader (page 2-1).
  Use the system disk that you have purchased as the backup system.

⚠ Handling Precautions

- This disk does not contain the system, and cannot be used as they are.

■ Loader functions

The loader has the following functions:
- Setup function
- Monitor function
- Adjustment function
- PID simulator function

● Setup function

This function is for setting up parameters required for running the controller on the personal computer and writing (setting) them to the controller. For details, refer to;
☞Chapter 3. SETTING UP.

● Monitor function

After the setup parameters have been written to the controller, changes to and tuning of control constants while the controller is running, switching of modes (RUN/READY, AUTO/MANUAL, etc.), run state and alarm occurrence can be checked.
The run state can also be checked on the Trend screen, and sampled data can be output in CSV format so that it can be handled in third-party spreadsheet software such as Microsoft Excel. For details, refer to;
☞Chapter 4. MONITORING.

⚠ Handling Precautions

- The monitor target is limited to only one unit when the loader jack on the front panel is used for performing monitoring.

● Adjustment function

This function is used when the user adjusts controller input.
For details on the adjustment function, refer to;
☞SDC15 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1148E
SDC25/26 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1149E
SDC35/36 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1150E.

⚠ Handling Precautions

- When the adjustment function is used, adjustment value stored on the controller so far are discarded. (When this function is used for the first time, the controller's default adjustment values are discarded.) Pay sufficient attention to this when using this function.

1 - 2   System Operating Environment

The following system environment is required for using the loader:

■ Hardware

Item		Description
Personal Computer	Target model	PC/AT compatibles with a Pentium chip or higher
	Memory	32M byte or more
	Operating system	Windows98/Me/2000 Professional/XP Home/ XP Proffessional
	Serial port	9-pin, serial port, 1ch or more*
USB Port	USB Port	1 port or more
Peripheral Devices	Display	800 X 600 dot or more, 16 bit color or more
	Hard disk drive	Hard disk with at least 40M byte of free space
	CD-ROM drive	1 drive or more
	Pointing device	Windows-compatible mouse or equivalent device

* : Serial port

It is recommended to use a personal computer with 9-pin serial port built-in.
If your personal computer does not have any serial port, you may use any of
the extension adaptors listed below to connect the loader cable.
However, note that the operation may become unstable depending on the
personal computer environment.

- Special interface (port replicater)
  Adaptor specially designed for each personal computer (special adaptor for
  each personal computer model)

- CF card adaptor
  CF232 manufactured by Elan Digital systems
  URL: http://www.elandigitalsystems.com/interface/cf232.php
  Operation confirmed personal computer, IBM's Thinkpad A31
  REX-CF60 manufacture by RATOC.
  URL: http://www.ratocsystems.com/products/subpage/cf60.html(Japanese)

- USB adaptor
  USB-RSAQ3 manufactured by I•O DATA DEVCE, INC.
  URL: http://www.iodata.jp/prod/mobile/serial/2004/usb-rsaq3/(Japanese)
  Operation confirmed personal computer, IBM's Thinkpad A31
  When connecting the USB cable, check the port No.
  The port No. may vary depending on the USB cable connection position.

⚠ Handling Precautions

- Before starting up loader, quit all other applications.
  If you start up loader while another application is running, loader may
  not function.
  Also, set the power save setting, infrared communications and screen
  saver to OFF.

- Make sure that the [Decimal symbol] has been set to " . " for [Control
  Panel] → [Regional Settings] → [Number].
  If it has been set to other character, the loader cannot correctly function.

■ Hardware configuration

● General configuration

SLP-C35

SDC15/25/26/35/36

Communications

Special cable (provided)
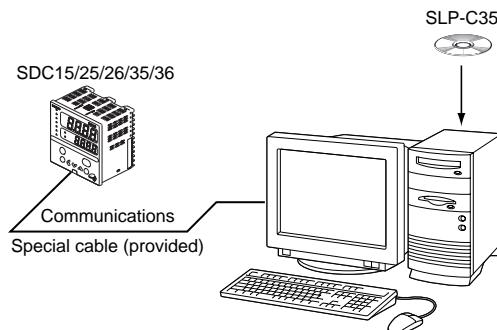
● Configuration with CMC10B/L
• When connecting 31 units or less

CMC10L

SDC15/25/26
35/36

Max. 31 units
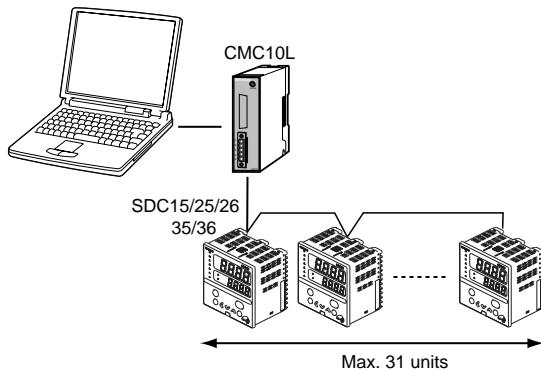
• When connecting 32 units or more

CMC10L CMC10B   CMC10B   CMC10B

SDC15/25/26
35/36

Max. 31 units   Max. 31 units   Max. 31 units
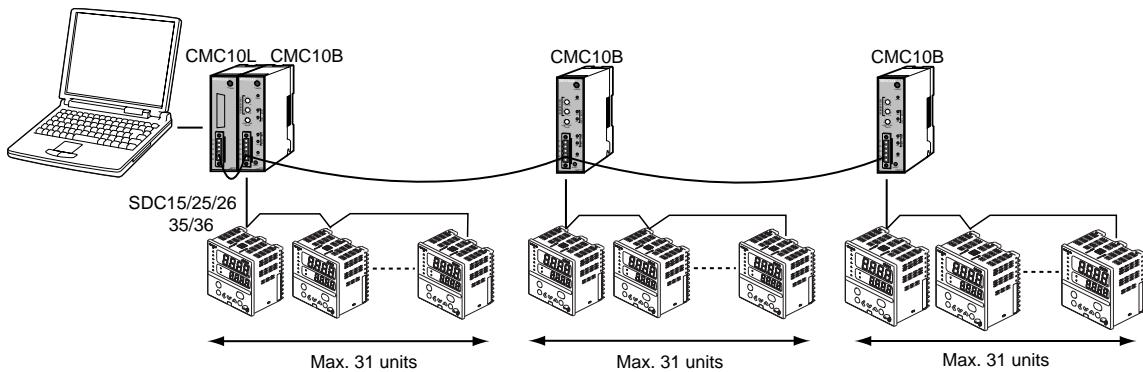
📖 **Note**
• The CMC10B allows up to 31 units to be connected to a host device.

📖 **Note**

• Personal computer used for confirmation of operating environment

Manufacturer	Model No.
Dell	OptiPlex GX110
IBM	Think Pad A31

Chapter 2. INSTALLATION, STARTING UP AND QUITTING THE LOADER

■ Installing the loader

This section describes how to install the loader on a personal computer.

⚠ Handling Precautions

- If you start up the Installer while another application is running, the Installer may malfunction.
  Remove other resident applications from their directories before starting up the Installer.
  The SLP-C35 sometimes cannot be started up depending on the combination of other applications and drivers.
  For details on Windows and personal computer settings, refer to the User's Manuals provided with Windows and the personal computer.
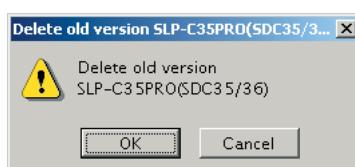
● Installing loader

(1) Set the CD-ROM in the CD-ROM drive of your personal computer.
  >>The installation program is then started up automatically and the following screen appears:

If the SLP-C35 having the old version has been installed, the screen shown below appears.
Click the [OK] button to uninstall the SLP-C35 having the old version.

(2) Click [Next >] button.

>>The following screen appears :
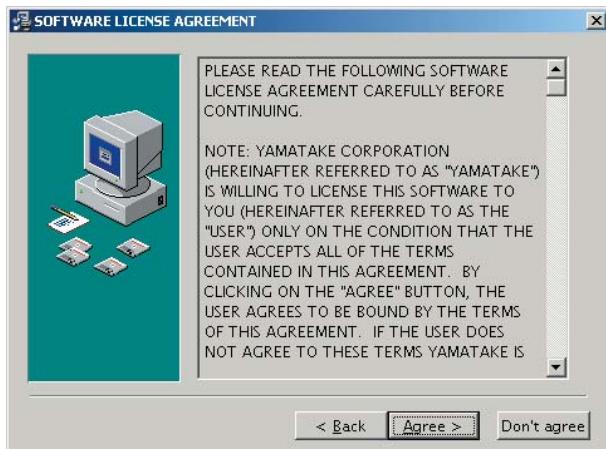
(3) If you agree to the software license agreement and wish to install the loader, click the [Agree >] button.

If you abort the installation, click the [Don't agree] button.

>>When clicking the [Agree >] button, the following screen appears :
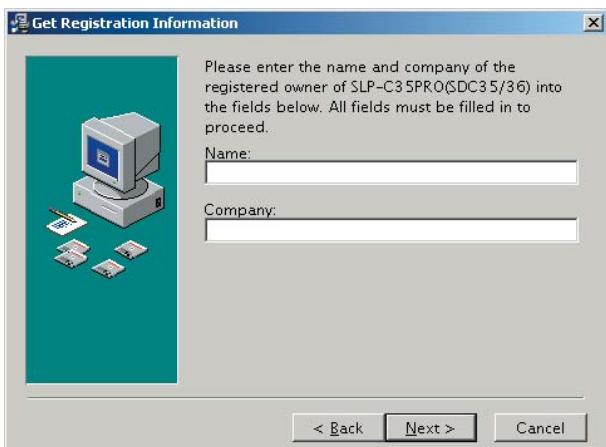
(4) Enter a registered user name and company name, and then click the [Next >] button.

>>The following screen appears :

(5) Click [Next >] button.

>>The following screen appears :
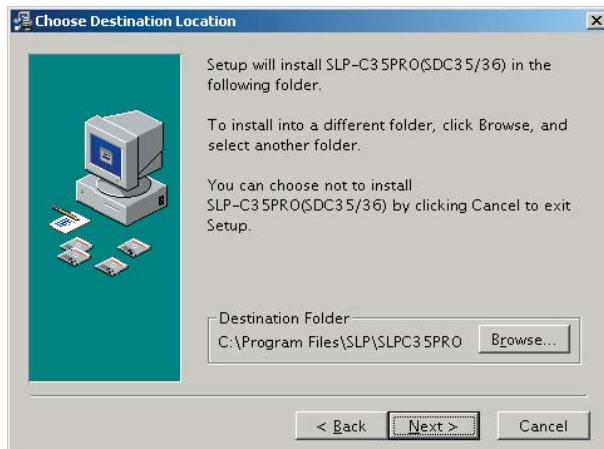
📖 **Note**

• To change the installation destination directory, click [Browse...] button.

(6) Click [Next >] button.

>>The following screen appears :
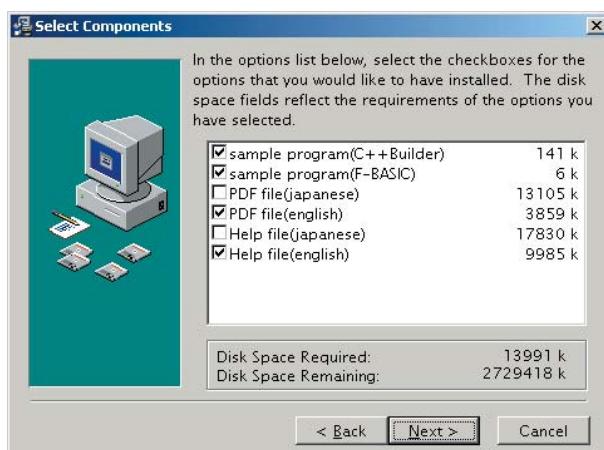
📖 **Note**

• Check on necessary files.

To display a PDF file, it is absolutely necessary to install Acrobat Reader.

For details, refer to;

☞Note on page 2-5.

(7) Check on (put a check mark : ☑) software components you wish to install and click [Next >] button.

>>The following screen appears :

Select Start Menu Group

Enter the name of the Start Menu group to add
SLP-C35PRO(SDC35/36) icons to:

SLP

Accessories
Administrative Tools
IrfanView
SLP
Startup

< Back   Next >   Cancel
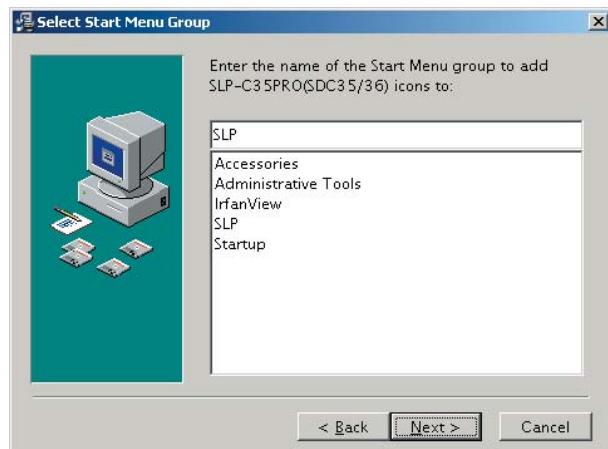
📖 **Note**

- To change the program folder, enter the new folder name.

(8) Click [Next >] button.

>>The following screen appears :

Start Installation

You are now ready to install
SLP-C35PRO(SDC35/36).

Press the Next button to begin the installation or
the Back button to reenter the installation
information.

< Back   Next >   Cancel

(9) Click [Next >] button.

>>The following screen appears :

Installation Complete

SLP-C35PRO(SDC35/36) has been successfully
installed.

Press the Finish button to exit this installation.

< Back   Finish >   Cancel
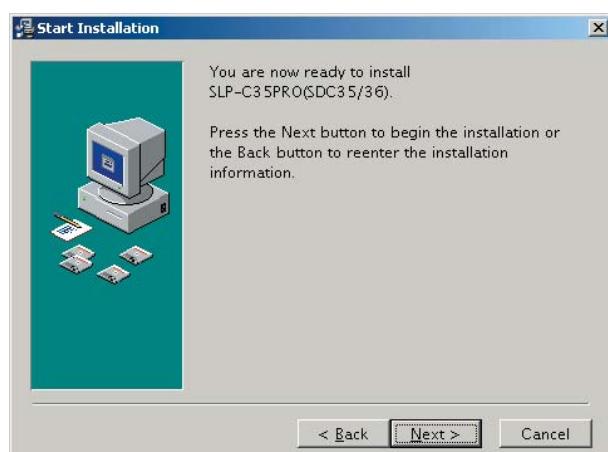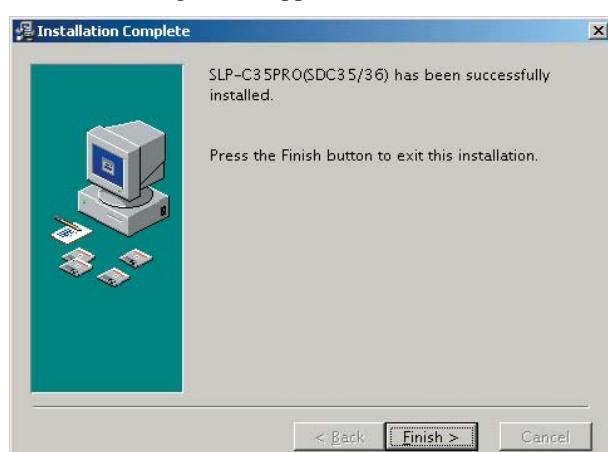
(10)Click [Finish >] button.

>>When the installation is completed successfully, the screen will return to the Windows screen.

📖 Note

- Installation of Adobe Acrobat Reader
  If the Adobe Acrobat Reader is not installed in your personal computer, install it using any of the following procedures:
    - Download the Adobe Acrobat Reader from Adobe Systems' home page.
    - Install [adberdr60_enu_full.exe] from the CD-ROM.

■ Starting up loader

Double-click the SLP-C35PRO (SDC35/36) icon on the desk top or click [Start] button at the lower portion of the screen and select [Programs] → [SLP] → [SLP-C35].

>>The loader is started up and the menu window is displayed.

📖 Note
- For the operating system details and the mouse setup, refer to User's Manuals
  provided with Windows.

■ Quitting loader

Click icon at the top right of the screen.
The operation is the same by selecting the [Menu] → [Quit].

Chapter 3.   SETTING UP

3 - 1   Setup Function

■ **Overview**

The setup function allows you to set the various parameters (about 10 to 70 constants required for operation) and write these parameters to the SDC15/25/26/35/36 so that it functions according to your particular control requirements. When the SDC15/25/26/35/36 is used for the first time, it will not function as required unless it is set up by using this setup function.
Parameters such as SP (set point) and control constants (PID values) that are changed relatively frequently while the SDC15/25/26/35/36 is running can also be set from the monitor function screen.
By the setup function, parameters that hardly need changing later once they are set are saved to file in list format before the SDC15/25/26/35/36 is run, and the saved file is called up and written to the SDC15/25/26/35/36 in a single operation.

■ **Screen explanations**

● **Menu screen**

• Menu configuration list

Menu	Icon	Sub Menu	Description	Shortcut Keys
Menu		Setup	Displays the Setup window.	Ctrl+S
		Monitor	Displays the Monitor / Trend window.	Ctrl+M
		Calibration(J)	Displays the Adjustment window.	Ctrl+J
		Option(E)	Changes the environment setup.	Ctrl+E
		Quit	Quits the application.	Ctrl+Q
Help		Version(A)	Displays the version information.	Ctrl+A

● **Setup screen**

Tool bar   Menu bar   Parameter display area

Selection
window

Message window
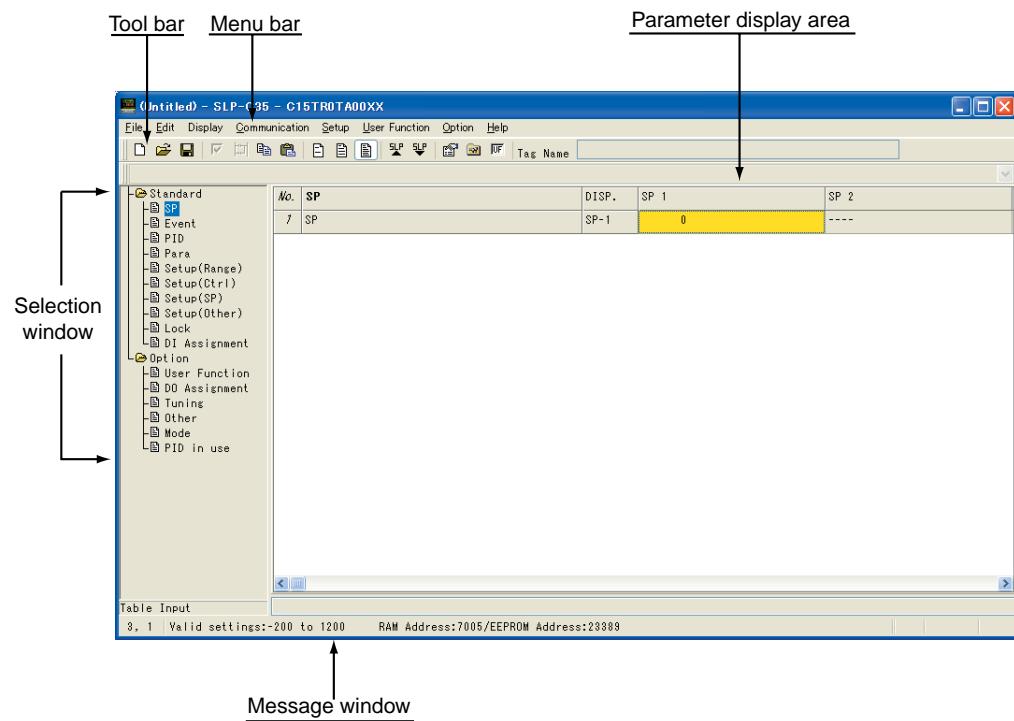
• Menu configuration list

Menu	Icon	Sub Menu	Description	Shortcut Keys
File		New	Creates new data.	Ctrl+N
		Open	Opens existing data.	CtrlvO
		Save	Saves the active data.	Ctrl+S
		Save As	Saves the active data with name.	Ctrl+A
		CSV Out(X)	Saves the active data in CSV format.	Ctrl+X
		HTML Out(H)	Saves the active data in HTML format.	Ctrl+H
		Print	Prints out the data. (Same contents of data saved in the HTML format.)	-
		Quit	Quits the application.	Ctrl+Q
Edit		Data Check	Checks all setting values.	Ctrl+D
		Bit edit	Inputs to bit lists.	Ctrl+B
		Input/Output Port setup	Displays the input/output port setup screen.	Ctrl+P
		Copy	Stores the copy source.	Ctrl+C
		Paste	Pastes the stored copy data.	Ctrl+V
Display		Basic(L1)	-	-
		Standard(L2)	-	-
		High function(L3)	-	-
		Parameter disp area	Displays the parameter display area.	-
		Hint enable	Displays the hint.	-
		Auto size	Makes the auto-cell size enabled.	-
		Size initalize	Initializes the cell size.	-
		Cell size adjust	Makes the cell size matched with the window.	-
Communication	SLP	Read(SDC15/25/26/35/36 -> SLP) (R)	Reads the device data.	Ctrl+R
	SLP	Write(SLP -> SDC15/25/26/35/36) (W)	Writes the data to the device.	Ctrl+W
Setup		Standard	-	-
		Option	-	-
User Function	UF	User function	Displays the user function registration screen.	-
		User function clear	Clears the contents of the user function registration.	-
Option		Type Setting	Changes the type setup.	Ctrl+T
		Environment Setting	Changes the environment setup.	Ctrl+E
Help		Version(A)	-	-

3 - 2　　Method of Setup

Configure setup in offline state (without connecting the cable to controller).

Click the [Option] on the menu screen. Set up in the following steps:

The following tasks are performed:

Step 1: Setting up the loader type

Step 2: Initialization (clearing previous setting values)

Step 3: Setting up the environment

Step 4: Setting up SDC15/25/26/35/36 parameters

Step 5: Saving setup data

Step 6: Downloading the setup

> ⚠ **Handling Precautions**
>
> - Operations in steps 1 to 5 are required before the setup parameters are entered on the SDC15/25/26/35/36. Be sure to perform these steps. Otherwise, the SDC15/25/26/35/36 may be set up incorrectly. For example, the required setup items may not be displayed or unrequired items may be displayed.

● **Step 1 (setting up the loader type)**

Set up the loader type to match the SDC15/25/26/35/36 model number.

(1) Click 🔧 icon.

The operation is the same by selecting the [Option] → [Type Setting] or the [Ctrl] + [T] keys.

>>The Type Setting dialog box is displayed.
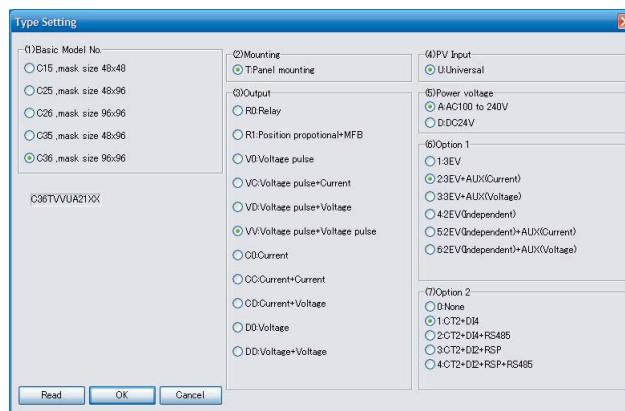
(2) Set the mounting type, control output, input type, power voltage and additional functions.

(3) Select from the selection items for each setting item.

(4) Click [OK] button.

> 📖 **Note**
>
> - Click the [Read] button to read out product data. This method prevents the downloading of a wrong parameter by the model number setup error.

⚠ **Handling Precautions**

• "Type" set here is the setting for internal use on the loader. The model number of the SDC15/25/26/35/36 will not change even if the type is changed on the loader.

• For an explanation of each of the specifications, refer to;
☞SDC15 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1148E
SDC25/26 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1149E
SDC35/36 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1150E

● **Step 2 (initialization)**

(1) Click 🗋 icon.

The operation is the same by selecting the [File] → [New] or the [Ctrl] + [N] keys.

>>The initialize dialog box appears.
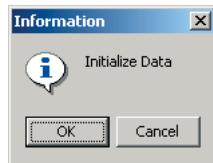
(2) Click [OK] button.

>>A new file opens.

● **Step 3 (setting up the environment)**

Set the communications port and font on the personal computer.

(1) Click ⊡ icon.

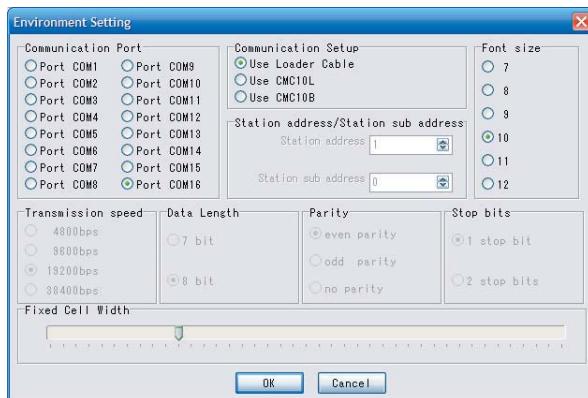The operation is the same by selecting the [Option] → [Environment Setting] or [Ctrl] + [E] keys.

>>The Environment Setting dialog box appears.

(2) Set the communications port. Select the port from the selection items.

(3) Set the font size. Select the front size from the selection items.

(4) Click [OK] button.

⚠ **Handling Precautions**

• Normally, use "Port COM1".
  Even if another communications port can be selected, it sometimes cannot be used depending on its shape.

• Normally, use "Use Loader Cable".

● **Step 4 (Setting up SDC15/25/26/35/36 parameters)**

Move the cursor to the target channel of each setup item, and perform the following operations:

• When the setting is a numerical value

  Enter the numerical value, and press [Return] key.

• When the setting is selected by a number

  Press the right mouse button on a setting item. The list of settings you can select will appear. Select a desired item to complete the setting.

Set each of the parameters required for running the SDC15/25/26/35/36. The following two types of parameters are set:

• Basic functions:

  Basic functions for device operation such as control and communications functions

• Option functions:

  Functions related to optional specifications, such as user function, DO assignment, and extended tuning.

⚠ **Handling Precautions**

• "– – – –" is displayed within the cell for parameters whose setting is not required or is prohibited by other setting items. These parameters cannot be set. In this case, re-check the type setting or other related settings.

• Items on the horizontal axis are channel numbers when basic functions are being set up, and are event output numbers or external switch input numbers when option functions are being set up.

• About connection to the personal computer
Normally, the controller is connected to the personal computer with the special cable.
Select [Option(O)] → [Environment Setting] and set [Communication Setup] to [Connect through CMC10L] or [Connect through CMC10B]. The controller is then connected through the CMC10B/L.
At this time, the environment setting and communication setup on the controller main unit must be adjusted beforehand.
Additionally, configure the settings on the controller in the offline mode (the cable is not connected to the controller).

📖 **Note**

• For details on the functions, refer to;
☞SDC15 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1148E
SDC25/26 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1149E
SDC35/36 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1150E

● **Step 5 (saving setup data)**

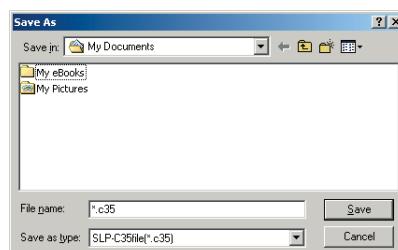When you have finished making the settings, save the setup.
Saving setups in advance and using saved setups greatly reduces the time and load when setting up the loader. The following items are saved:
• Type
• Setup parameters

(1) The operation is the same by selecting the [File] → [Save As] or [Ctrl] + [A] keys.

>>The Save As dialog box appears.

(2) Enter the file name, and click [Save] button.

● **Step 6 (downloading the setup)**

Write the set parameters or parameters called up from a saved file to the SDC15/25/26/35/36.

(1) Use the special loader cable to connect the personal computer to the SDC15/25/26/35/36 body.

(2) Turn the SDC15/25/26/35/36 ON.

(3) Click 🖳 icon.

The operation is the same by selecting [Communication] →
[Write(SLP→SDC)] in the pull-down menu.

>>The message "Writing is going to be executed." is displayed.

(4) Click [OK] button.

>>This starts writing of the setup parameters.

During writing, the message [Please wait.] is displayed. When writing ends, the message [Normal end] is displayed.

⚠ **Handling Precautions**

• If writing fails, the message [Communications error has occurred.] is displayed. If writing is not possible, refer to;
☞Chapter 5. TROUBLESHOOTING.

Chapter 4. MONITORING

4 - 1   Monitor Function

■ **Overview**

The loader exclusively for the SDC15/25/26/35/36 is used for monitoring SDC15/25/26/35/36 operation.

To enter the monitor screens, click [Monitor] in the menu screen.

The loader has the following two monitor screens:

• Numeric Monitor screen:

  This screen is for performing operations such as changing setups or switching modes.

  • Numeric display of the various running parameters

    (parameters can be changed)

  • Lamp indication of the various running modes

    (lamp indications can be operated)

  • Alarm display (representative and detailed)

• Trend Monitor screen:

  This screen is for monitoring the running state of the SDC15/25/26/35/36 in the form of a trend graph.

  • Screen display of trends for max. of sixteen data items

  • Screen display of digital data trends for max. of five data items

  • Export of sampled data as CSV file

  • Trend screen dumps

  • Data type:

    PV, SP, MV, user-defined data (all analog data that can be communicated)

  • Sampling cycle:

    Variable within the range 1 to 3600s

  • Max. sampling count:

    60,000 (fixed regardless of number of data items to sample)

📖 **Note**

  • A "CSV file" is the data format that can be handled in third-party spreadsheet software such as Microsoft Excel. In this format, sampled trend data can be interpreted in spreadsheet software.

These screens can be used to perform the following operations:

• Monitoring of the running state and changing of parameters in the Numeric Monitor screen

• Switching of the run mode in the Numeric Monitor screen

• Tuning of control constants in the Numeric Monitor screen

• Monitoring of trends and sampling of data while the SDC15/25/26/35/36 is running

• Monitoring of alarm states in the Numeric Monitor screen

⚠ **Handling Precautions**

• About connection to the personal computer
  When making the setup or operating the monitor using the loader, connect the loader cable.

• Before starting the trend monitor, configure the settings suitable for the trend monitor.

• The sampling cycle sometimes shifts due to fluctuations in the communications cycle. To perform measurement at exact times, use the special recorder or data logger.

■ Screen explanations

● Numeric monitor screen
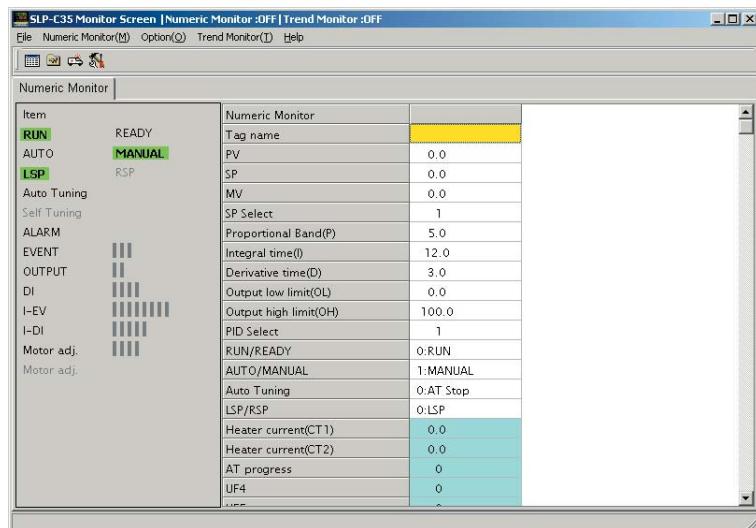
• Menu configuration list

Menu	Icon	Sub Menu	Description	Shortcut Keys
<u>F</u>ile		Quit	Quits the Monitor window.	Ctrl+Q
Numeric Monitor (<u>M</u>)		Numeric Monitor Start/Stop (<u>M</u>)	Starts/stops the monitor.	Ctrl+M
Option (<u>O</u>)		<u>S</u>etup	Displays the Setup window.	-
		Alarm (<u>A</u>)	Displays the Alarm Details window.	-
		Command Line (<u>C</u>)	Displays the Command Line window.	-
Trend Moni Monitor (<u>T</u>)		-	Changes the display to the trend monitor.	-
<u>H</u>elp		Version(<u>A</u>)	Displays the version information.	-

● **Trend monitor screen**
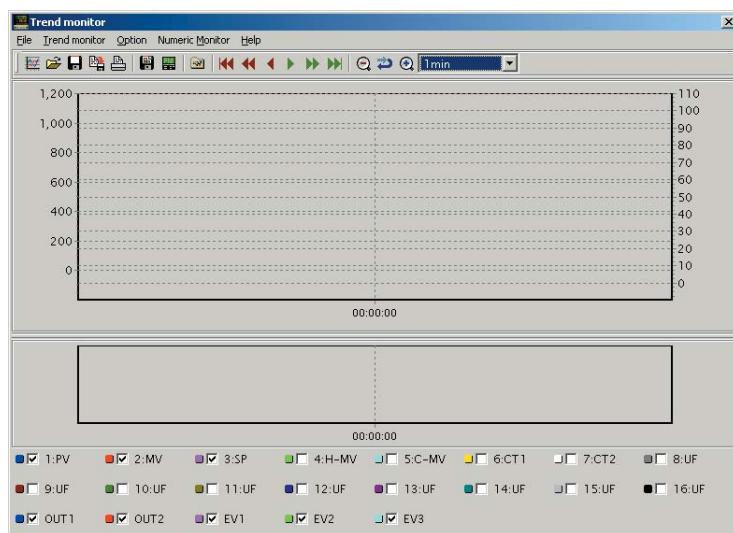
• Menu configuration list

Menu	Icon	Sub Menu	Description	Shortcut Keys
File		Quit	Quits the Monitor window.	Ctrl+Q
Trend monitor		Trend monitor Start/Stop (T)	Starts/stops the trend monitor	Ctrl+T
		CSV Read	Reads the trend data.	-
		CSV Out(X)	Outputs the trend data in CSV format.	Ctrl+X
		Clipboard Graph Out	Outputs an image of the graph to the Clipboard.	Ctrl+C
Option		Setup	Displays the Setup window.	-
Numeric Monitor		-	Changes the display to the numeric monitor	-
Help		Version(A)	Displays the version information.	-

• Icon list

| Icon	Description
⏮	Returns the graph to the start time.
⏪	Returns the graph by 1/2 screen.
◀	Returns the graph by 1/4 screen.
▶	Advances the graph by 1/4 screen.
⏩	Advances the graph by 1/2 screen.
⏭	Advances the graph to the latest time.
⊖	Zooms out the graph.
↩	Undoes the graph zoom.
⊕	Zooms in the graph.
1min ∨	Specify a time scale of the graph. 1min. 2min. 10min. 1hr. 12hrs. 24hrs. Auto

• Zooming the graph

Drag the mouse from the upper left portion to the lower right portion with the left mouse button kept pressed.
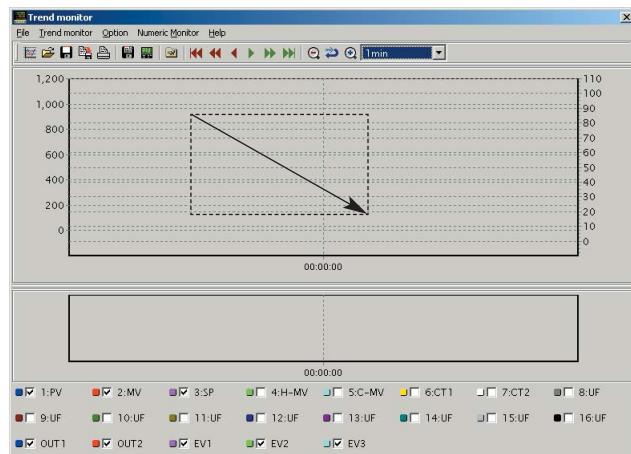
• Canceling the zoomed graph

Drag the mouse from the lower right portion to the upper left portion with the left mouse button kept pressed.
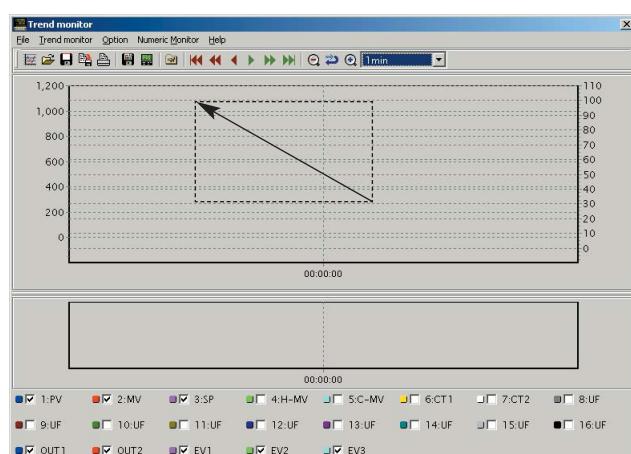
4 - 2   Method of Operation

■ How to operate the numeric monitor screen

● Start of monitoring (start of communications)

The operation described below is required to start monitoring.

Otherwise, monitoring and rewriting of data cannot be performed.

• Click ⊞ icon.

The operation is the same by selecting [Numeric Monitor] → [Numeric Monitor Start].

>> During normal operation: The data on the SDC15/25/26/35/36 is displayed.

During an error: The message [Check the device to which the loader is connected.] is displayed. Remedy according to Chapter 5. TROUBLESHOOTING.

The following operations are possible when the device and the loader are correctly connected:

● Monitoring of run state and changing of parameters

Numeric monitor (displayed in table format) Numeric group monitor	Tag name Process Variable (PV) Set point (SP) Manipulated variable (MV)
State monitor (displayed in lamp lighting format)	RUN/READY mode, AUTO/MANUAL mode LOACAL/REMOTE state Auto-tuning start/stop state Self-tuning start/stop state ALARM mode Control output ON/OFF state Event output ON/OFF state Internal event ON/OFF state DI terminal ON/OFF state
Operation (Operations possible in numeric changes are limited as follows.)	SP value change SP set change Manipulated variable (MV) change in MANUAL mode PID value change RUN↔READY switching AUTO↔MANUAL switching Auto-tuning start↔stop switching
About the operation mode	RUN/READY mode 0: RUN 1: READY AUTO/MANUAL mode 0: AUTO 1: MANUAL

● **Changing of data**

Operation by entry of numerical values → Enter the numerical value, and press the [Return] key.

● **Setting of user-defined address**

Optional data not in the table can be registered to user configuration address UF 1 to 8 in the table. Data can be read or written according to the data type.

• How to set user-defined address:

(1) Select the [Set monitor] tag under [Option (O)] → [Setup] in the pull-down menu.

(2) Enter the address of the data to display according to SDC15 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1148E, SDC25/26 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1149E and SDC35/36 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1150E.

● **Use of the command line**

Data can be read or written or the mode switched by directly entering communications commands on the command line.

⚠ **Handling Precautions**

• Transmission of the wrong command may result in trouble on the SDC15/25/26/35/36. For this reason, take sufficient care when describing command types, addresses, data and other information.

• For details on communications commands and data addresses, refer to;

☞ SDC15 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1148E

SDC25/26 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1149E

SDC35/36 Single Loop Controller User's Manual "Installation & Configurations" CP-SP-1150E.

• Loader lock is enabled.

● **Checking details of alarms**

You can check the details of alarms in the Alarm window when an alarm occurs.

• Click 🖴 icon.

The operation is the same by selecting the [Option (O)] → [Alarm (A)].

• The details of the alarm that is occurring are displayed.

⚠ **Handling Precautions**

• This window displays the details of currently occurring alarms, and does not have a function for restoring the SDC15/25/26/35/36. To restore the SDC15/25/26/35/36, you must perform the appropriate remedy described in Chapter 5. TROUBLESHOOTING.

● **About the numeric group monitor**

The numeric group monitor can be used when [Connect via CMC10] is set by the [Environment Setting] → [Communication Setup]. Connect the loader cable to CMC10B/L.

Up to eight groups can be monitored.

■ How to operate the trend monitor

● **Setup**

Select [Trend], [Trend monitor individual], and [Digital trend] at [Option (O)] → [Setup], and make the following settings for each sampled data (1 to 16).

As the cycle and display upper/lower limits are common to all channels.

• Trend

Setting Item	Description	Setting Range	Factory Setting
Cycle	Setting of sampling cycle	1 to 3600s	1
Display low limit of left axis	Lower value of vertical axis of screen display	-1999 to display upper limit	0
Display high limit of left axis	Upper value of vertical axis of screen display	Display lower limit to 9999	1200
Display low limit of right axis	Lower value of vertical axis of screen display	-1999 to display upper limit	-10
Display high limit of right axis	Upper value of vertical axis of screen display	Display lower limit to 9999	110

• Trend monitor individual

| Setting Item	Description	Setting Range	Factory Setting
Data type	Type of sampled data	0 : Not used 1 : PV 2 : MV 3 : SP 4 : H-MV 5 : C-MV 6 : CT1 7 : CT2 8 : User-defined data	-
Axis	Specify an axis used for the graph.	0 : Left 1 : Right	-
User-defined address	Address of relevant parameter when the data type is set as "user type"	Address of communicable parameter	256
Station adress	Set the station address when a CMC10B, for example, is used.	0 to 127	1
Station sub-adress	Set the station sub-address when a CMC10B, for example, is used.	0 to 127	0

⚠ **Handling Precautions**
- When the user-defined address is specified, make the decimal point setting manually.

• Digital trend

| Setting Item	Description	Setting Range
Address	Address of parameter	256 to 32767
Bit	Specified bit of parameter	0 to 15
Name	Name of parameter	Up to 10 alphanumeric characters

• Selecting trend monitor colors
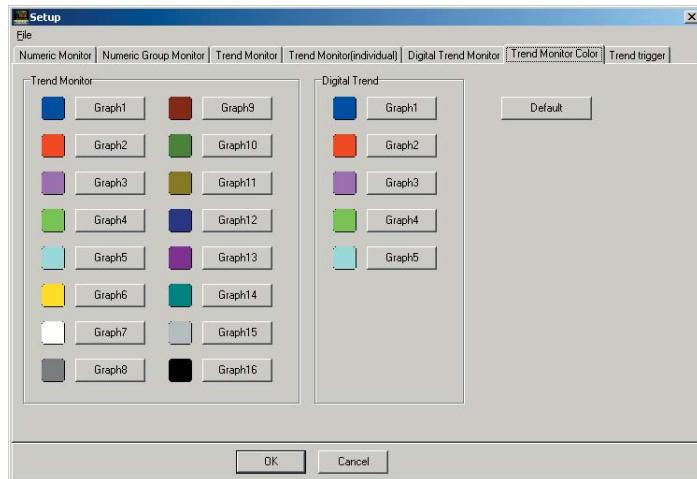
When selecting [Graph 1] to [Graph 16], the color selection screen will appear.
Select a desired color.
Clicking [Default] will return the color setting to its initial value.

• Setting up the trend trigger
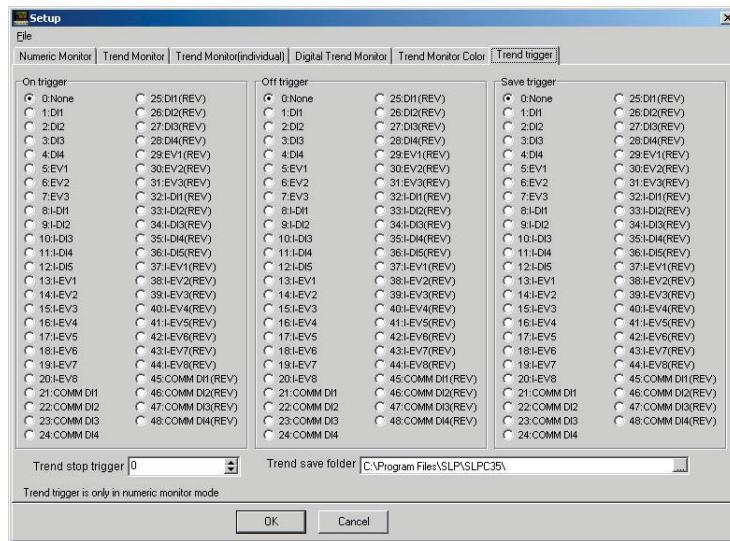
When setting up the trend triggers, the trend can be started and stopped according to the status of the individual monitor.

The trend trigger setup is valid only while the individual monitor is running.

When setting up the trend save triggers, the trend can be saved according to the status of the individual monitor.

The file is saved into a specified trend save folder in the "TREND-YYYY-MM-DD-HH-MM-SS.CSV" format.

● **Starting the data sampling**

When the setup is completed, start up the trend monitor.

Click ![icon] icon.

The same operation can be started by selecting [Trend Monitor] → [Trend Monitor Start].

The data sampling is started, and then the trend of the specified parameters is displayed on the screen.

• Once the trend monitor is started, it continues until the stop operation is performed or the data for 60,000 cycles is sampled.

• If the stop operation is not performed, the data is overwritten onto the old data when the data sampling for 60,000 cycles is completed.

• The screen can be transited to the "Numeric Monitor" screen while the trend monitor is running. However, the loader cannot be quitted or the screen cannot be transited to the "Setup" screen. To do so, quit the trend monitor.

● **Stopping the data sampling**

Select [Trend Monitor] → [Trend Monitor Stop].

The trend monitor is then stopped.

● **Saving sampled data**

The data sampled using the trend monitor can be saved into a file in the CSV format. The sampled data saved in the CSV format can be processed using spreadsheet applications, such as Microsoft Excel.

! **Handling Precautions**

• The data can be saved into a file even while the trend monitor is running.

• The data, which has been saved into a file, is retained in the personal computer unless it is initialized. However, the data saved in the file cannot be redisplayed on the loader screen.
To display such data, use an appropriate spreadsheet application.

● **Saving clipboard graph output**

The display contents on the "Trend Monitor" screen can be directly saved into the clipboard as a copy of the screen.

Chapter 5.　TROUBLESHOOTING

5 - 1　　　Error Messages and Remedy

■ Communications error messages

Category	Message	Description	Remedy
Communication error	Time out.	The message cannot be received within a period of the time-out time. An instrument other than SDC15/25/26/35/36 is connected. The main unit is not connected.	Check the cable connections and contacts. Use the loader with it connected to SDC15/25/26/35/36.
	Cannot open communications port.	The communication port cannot be opened.	Do not run the loader and other application using the communication port at the same time.
	Communications error has occurred.	The system error occurs.	Re-operate or quit the loader to restart Windows.
	Trend monitor is active.	The monitor screen cannot be quitted while the trend monitor is running.	Quit the monitor screen after the trend monitor has been completed.
SDC15/25/26/35/36 status error	Cannot support currently connected SDC15/25/26/35/36.	The loader currently in use is not applicable to the version of the main unit.	Contact Yamatake Corporation or its dealer.
	Loader Lock or Communication Lock.	The data cannot be loaded from the loader since the loader is locked or the password is set.	Cancel the loader lock or password to restart the operation.

■ File error messages

Category	Message	Description	Remedy
File name error	This filename is not valid.	An invalid file name is input.	Input a correct file name.
	This file cannot be found. Make sure that the correct path and filename are given.	A file name not existing is input.	Input an existing file name.
	This filename is a reserved device name. Use a different filename.	A file name reserved for the device name is input.	Input a correct file name.
Disk error	Not enough free space on disk.	The disk free capacity is insufficient.	Keep a sufficient disk free capacity.
	The device is not ready.	The disk is not ready.	Prepare the disk and restart the operation.
	Cannot make file.	The CD-ROM is specified as save destination.	Save the file to another directory.
	File name too long.	The file name is too long.	Use 256 characters or less for the file name.
Pass name error	The path does not exist. Make sure that the correct path is given.	An illegal path name is input.	Input a correct path name and restart the operation.
File information error	Illegal file size. Illegal file information.	The file is corrupted.	Corrupted file cannot be used. Create a file again.

5 - 2　　　Other Troubleshooting

Trouble	Description	Remedy
Numeric values are not displayed correctly.	If a decimal point symbol other than " . " (period) is set, the loader does not function correctly.	Check that the decimal point symbol is " . " (period). If not, set the decimal point symbol to " . " (period).

Revision History

Printed date	Manual Number	Edition	Revised pages	Description
Oct. 2005	CP-UM-5290E	1st Edition		